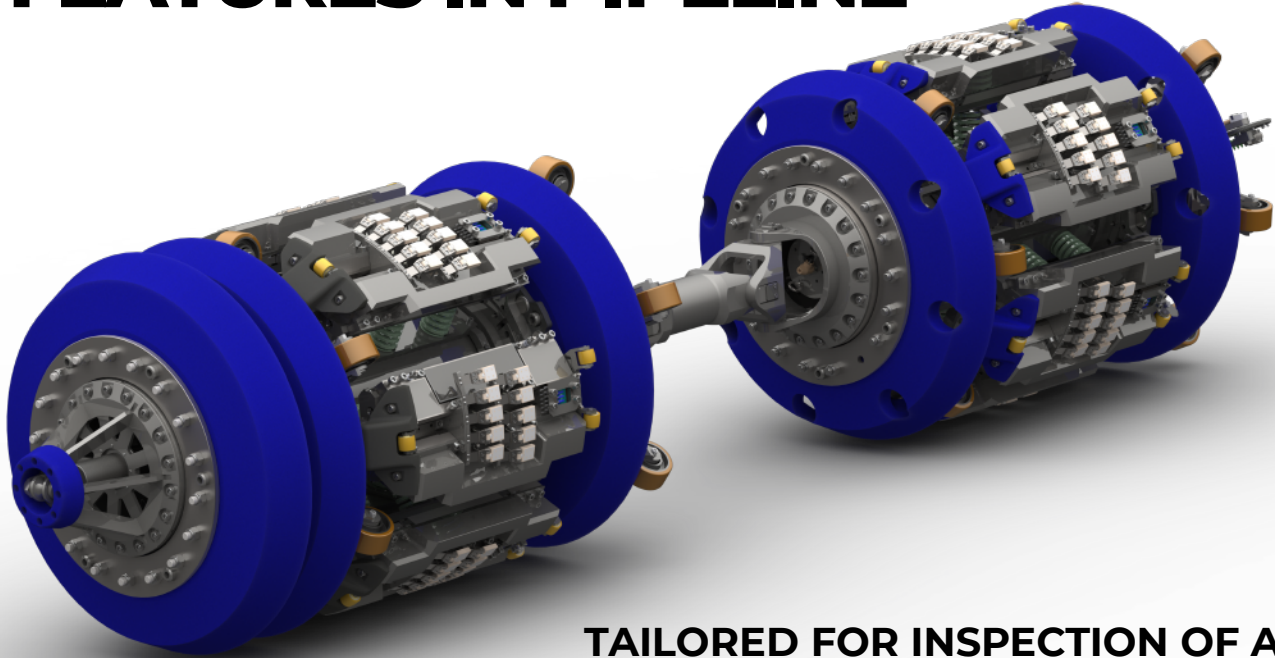


TRANSVERSE FIELD INSPECTION (TFI) FOR AXIAL FEATURES IN PIPELINE



**TAILORED FOR INSPECTION OF AXIAL
ORIENTED FEATURES**

HIGH-RESOLUTION TRANSVERSE FIELD INSPECTION TECHNOLOGY **BEST DETECTION & HIGH PERFORMANCE FOR AXIAL FEATURE INSPECTION IN PIPELINES**

Longitudinal weld anomalies and narrow axial internal and external corrosion can pose a severe integrity threat to pipelines.

Conventional MFL tools that apply the magnetic field in the axial direction do not provide reliable detection and sizing of such anomalies.

PIPECARE Transverse Field Inspection technology is also magnetic flux leakage based. However, magnetizer sections installed in the inspection tool induce a flux field in the circumferential direction.

The proven design and high magnetization of the TFI tools coupled with an extra-high circumferential resolution provide reliable detection and sizing of narrow longitudinally -

oriented metal loss anomalies.

This magnetizer system design ensures detection and sizing of general type metal loss anomalies, the same as conventional MFL tools. However, it is also specially developed for the measurement of longitudinally oriented anomalies such as tunnel corrosion, longitudinal weld anomalies.

We run our PIPECARE TFI tools as stand-alone tools. We can combine it with other inspection technologies, such as MFL, UT, geometry, and mapping.

For more information on how PIPECARE's TFI Technology can help detect threats in pipelines, contact PIPECARE at the below information. Our team of experts is ready to help.

TRANSVERSE FIELD INSPECTION (TFI)

DETECTION AND SIZING ACCURACY FOR METAL LOSS ANOMALIES

	General metal-loss	Pitting	Axial Grooving	Circumf. Grooving	Pinhole	Axial Slotting
Depth at POD=90%	0.1†	0.1†	0.1†	0.15†	N/A see below	0.1†
Depth sizing accuracy at 90% certainty	±0.1†	±0.15†	±0.1†	±0.15†	±0.3†	±0.15†
Width sizing accuracy at 90% certainty [mm]	±12	±10	±10	±20	±8	±5
Length sizing accuracy at 90% certainty [mm]	±20	±15	±15	±15	±10	±10
Minimum pinhole diameter at POD=90% if depth=50%† [mm]					4	
Minimum pinhole diameter at POD=90% if depth=20%† [mm]					5	

Max. length of axial slottings: 30 mm.

DETECTION AND SIZING ACCURACY FOR CRACKS OR CRACK-LIKE ANOMALIES

	Axial crack Pipe body/ weld	Axial crack colony Pipe body	Spiral weld Crack
Depth at POD=90% [%nwt] of crack with L25	0.2†	0.1†	0.3†
Minimum crack opening [mm]	0.15	0.15	0.25
Depth sizing accuracy at 90% certainty	±0.2†	±0.2†	±0.25†
Length sizing accuracy at 90% certainty	±25	±25	±20
Orientation limits (in degrees) for	±45°	±45°	n.a.

LOCATION ACCURACY

Accuracy of distance to upstream girth weld at 90% certainty	+/- 0.05 m
Accuracy of distance from trap valve at 90% certainty	+/- 0.2%
Accuracy of circumferential position at 90% certainty	+/- 8°

GENERAL SPECIFICATIONS

Tool sizes	3" to 56"
Pipeline product	All Media (gas, liquids, multiphase)
Operating pressure range	0 to 12 MPa
Operating temperature range	-20 to +85° C
Wall thickness range	3 to 25.4 mm
Tool velocity range	0.2 to 4.0 m/sec
Min. pipeline bend radius	1.5D (8' and above size)
Min. passage bore	80% / 85% of OD